

Star Raving Glad

At first glance, it may be difficult to tell what the new Rauch Planetarium at the Gheens Science Center will have in common with Stonehenge. But then, as there is with a lot of science, the fun is in the discovery.

Shortly after the original Rauch Planetarium was razed to make way for a new parking garage for the Speed Art Museum in March of 1998, plans were made to build a new and improved structure. The Louisville architectural firm of Louis & Henry Group—its progenitors, Harstern, Louis & Henry, designed the original planetarium in 1961—was chosen to design the new facility. The edifice, named the "Gheens Science Center and Rauch Planetarium," will incorporate both a planetarium and more terrestrial scientific exhibits. Still named in honor of the late rabbi Joseph Rauch, the planetarium, which will be located between Strickler Hall and Brandeis Avenue, will serve as the centerpiece of a science center provided by the Gheens Foundation for \$1.45 million. (The City of Louisville, the University of Louisville, Jefferson County and the Hilliard Lyons Trust Company, among other entities, also have pledged funds to offset the undertaking.)

"It's going to be a little bit grander than the old planetarium," says Ron Moore, the vice president for Information Technology at the University of Louisville. He refers to the use of Immersive Visualization video—developed by Chadds Ford, Pennsylvania planetarium pioneers Spitz, Inc.—and lasers' ability to do "even more exciting things" than the old facility. The video will be truly immersive, spanning a 200-degree stretch of horizon 60 degrees high in a 55-foot dome tipped 12 and a half degrees. "We're using virtual reality elements, even virtual caves," Dr. Moore says.

In addition to the gee-whiz graphics, the planetarium will be versatile as well. The old planetarium's size and layout "weren't conducive to classes," says Dr. Moore. "We could fit 80 adults or about 100 children." Today, a typical undergraduate physics class enrolls approximately 150 students per section. "Kindergarten through 12th grade, even preschool through 12th, [comprise] 80 to 85 percent of our patrons. With the new one it'll still be primarily P-12 but more accessible to students on campus" with projected seating for 160. Also, as the 4,354-star projector—the old device featured outlets for approximately 1,000 stars—is situated on an elevator shaft-type structure, operators will be able to retract it for use with standard classroom applications.

Architecturally, the design is just about finished but the bricks-and-mortar work has yet to be started. Bids were advertised Sept. 16 and will open mid-October. At that time, trustees will determine a budget, to be followed by groundbreaking later this fall.

Tony Kleyer, a project architect from the Louis & Henry Group, described the site plan of the new building. Still, the planetarium building is more than just a place to learn about celestial events.

"There will be a multipurpose gathering room, gift shop and a large lobby with exhibits," he explains, "as well as the auditorium." He describes the seating as facing forward toward the tilt so as to not distract planetarium-goers with the equipment. The domed area, he says, is enclosed in a truncated cone—"like a wizard's hat, perhaps." Fiber optic lighting along the orbits along the cone is designed to make the outside of the building "really glow... really interesting at night." And, there will be a garden area that will house even more exhibits.

"It's two entities in one building," says Bill Brasch, the project manager

representing University Planning Design and Construction for the university. "We have the mission of the Gheens Science Center, and there will be exhibits outside of the actual theater space," including displays on rotating loan from other museums and planetariums. The building promises to be different, yet consistent with the university community of building. The bricks and concrete will match other U of L buildings such as the Student Activities Center and nearby College of Business and Public Administration. Nevertheless, certain elements guarantee the uniqueness of this very new construction.

"Stonehenge was a concept early on in our planning," says Mr. Kleyer. He explains how ancient peoples designed the monolithic arrangement in accordance with solar events at various times of the year. "Well, the [planned] garden wall is the exact height" as one of the trilithons—one of the three-stone structures featured in Stonehenge. The pattern of the windows in the building will echo this, with window openings relatively low. "This way," says Mr. Kleyer, "when you exit the theater, it makes you look up at the exhibits."

"We had a discussion about the garden wall being illuminated by the sun," says Dr. John Kielkopf, an astronomy and physics professor and technical consultant on the project. "I pointed out to [Mr. Kleyer] that the wall is the same size as one of the trilithons and how illuminations and shadows will fall," depending on the alignments on the horizon, the rising and setting of the sun and changes with seasons and time. Dr. Kielkopf designed some imaging models for the architect to illustrate how the sun would land on the openings at various time of the year, including at an opening at true north. Says Mr. Brasch: "Our expectations are exceeding most of the things we thought we could do."

Besides being an IT department entity, IT personnel are designing and producing the show programming. The scope, while not as expansive as the universe itself, is wide.

"We're going to look at astronomical observations through the years," says IT's Scott Miller, who leads the production team. "The Mayans, the Aztecs, medicine wheels, Stonehenge. We're researching it, writing it, planning it and producing it."

The planetarium and science center, which is projected to open in December of next year, is currently one of only two facilities in the world to use the immersive video technology.

"There's another one, in Kansas, and it's not even open yet!" says Dr. Moore. "We're doing very, very new things.

"It's something for the community," he continues. We've picked the best and the brightest to help us."